

<b>Notice of References Cited</b>	Application/Control No. 10/775,670	Applicant(s)/Patent Under Reexamination NECOLA SHEHADA, RAMEZ EM	
	Examiner Laura C. Hill	Art Unit 3761	Page 1 of 1

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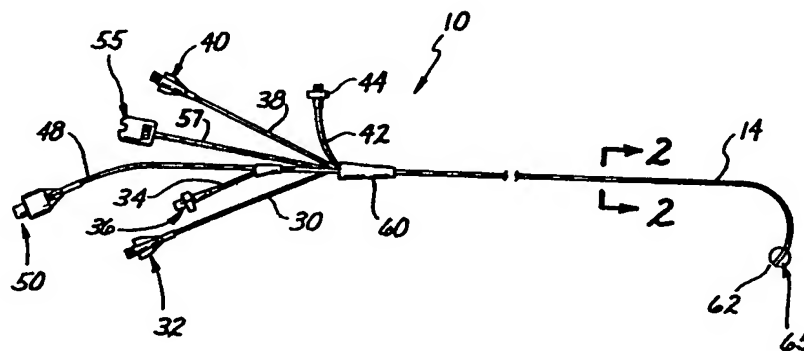
\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)  
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<b>(51) International Patent Classification 5 :</b>  <b>A61B 5/00, G06F 15/20</b>	<b>A1</b>	<b>(11) International Publication Number:</b> <b>WO 92/11803</b>  <b>(43) International Publication Date:</b> 23 July 1992 (23.07.92)
<b>(21) International Application Number:</b> PCT/US92/00298 <b>(22) International Filing Date:</b> 6 January 1992 (06.01.92)  <b>(30) Priority data:</b> 638,258                      7 January 1991 (07.01.91)                      US  <b>(71) Applicant:</b> BAXTER INTERNATIONAL INC. [US/US]; One Baxter Parkway, Deerfield, IL 60015 (US). <b>(72) Inventor:</b> FRAZEE, Walter, L., R. ; 22145 Debra, El Toro, CA 92630 (US). <b>(74) Agents:</b> CANTER, Bruce, M. et al.; 2132 Michelson Drive, Irvine, CA 92715-1304 (US).		<b>(81) Designated States:</b> AT (European patent), BE (European patent), CA, CH (European patent), DE (European patent), DK (European patent), ES (European patent), FR (European patent), GB (European patent), GR (European patent), IT (European patent), JP, LU (European patent), MC (European patent), NL (European patent), SE (European patent).  <b>Published</b> <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>

**(54) Title:** CARDIOPULMONARY MONITORING SYSTEM WITH INTEGRATED BLOOD OXYGENATION SIGNAL QUALITY INDICATOR

**(57) Abstract**

A cardiopulmonary monitoring system (100) transmits and receives optical signals to and from the interior of a blood vessel via a fiberoptic catheter (10). The signals may be processed to obtain a measurement of the blood oxygenation saturation level of the blood within the blood vessel. The cardiopulmonary monitoring system includes a detector which detects optical signals. A detector (402) provides an electrical output signal which has an amplitude that is proportional to the intensity of the detected optical signal transmitted from the blood vessel. The monitoring system (100) further comprises a signal processing device (420), which includes means for comparing the amplitude of the output signal with a threshold amplitude value, monitoring the frequency with which the output signal exceeds the threshold value during a selected interval of time, and generating a first signal quality indicator value based upon the monitored frequency. The monitoring device (100) also monitors the magnitude variations in the output signal due to pulsatile blood flow through the blood vessel and generates a second quality indicator value in response thereto. The monitoring device (100) also monitors the amplitude of the output signal and generates a third signal quality indicator value in response thereto. The three indicator values are then compared, and the highest one is selected to be output as a quality display value. The output quality display value is indicative of the reliability of the blood oxygenation saturation level reading output by the monitoring system.